

CLAIMS

1. A method of separating colouring agents, particularly printing ink, from recycled fibre material, in which method the recycled fibre material containing a colouring agent is defibered using a liquid, preferably water containing auxiliary chemicals, so that colouring agent contained in the recycled fibre material is separated from the recycled fibre during the defibration, **characterized** in that the recycled fibre material and liquid are first applied to a separate pre-breaker, such as a pulper or the like for pre-kneading the recycled fibre material, that the pre-kneaded recycled fibre material together with liquid and gas or a gas mixture, such as air, are applied to a double-action impact mill comprising at least two concentrically rotating rings having impact surfaces and radial openings, such that adjacent rings rotate in opposite directions relative to one another, that the recycled fibre material, the liquid and the gas or the gas mixture are applied in the middle of the rings, from where they are thrown from one impact surface to another, and, by the action of centrifugal force, radially outwards from the middle in such a manner that the substantially continuous material flow applied to the double-action impact mill is broken in the gas into small material flow parts that are finally thrown through the openings between the impact surfaces outside the double-action impact mill, and that the efficient treatment time of the recycled fibre material in the double-action impact mill is at most two seconds, the colouring agent attached to the recycled fibre material being separated from the recycled fibre material as it hits the impact surfaces of the rings, allowing the colouring agent to be removed in further processing from the generated pulp suspension discharged from the double-action impact mill.

2. A method as claimed in claim 1, **characterized** in that the efficient treatment time of the recycled fibre material in the double-action impact mill is at most one second.

3. A method as claimed in claim 1 or 2, **characterized** in that the double-action impact mill comprises at most four coaxially arranged rings.

4. A method as claimed in any one of the preceding claims, **characterized** in that chemicals for enhancing the separation of the colouring agent and/or its remaining separated and/or for enhancing further processing are applied to the double-action impact mill simultaneously together with the recycled fibre material.

5. A method as claimed in claim 4, **characterized** in that one

of the chemicals applied is an alkali, such as for example sodium hydroxide.

6. A method as claimed in claim 4 or 5, **characterized** in that at least one of the chemicals applied is a collector chemical, such as soap.

7. A method as claimed in any one of claims 4 to 6, **character-**
5 **ized** in that one of the chemicals applied is water-glass.

8. A method as claimed in any one of claims 4 to 7, **character-**
ized in that one of the chemicals applied is hydrogen peroxide.